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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/926,102 | 08/31/2001 | Jiro Toyoda | 011089 | 9699 |

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EXAMINER

BHAT, NINA NMN

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 09/926,102 | Applicant(s) TOYODA, JIRO | |
| | Examiner N. Bhat | Art Unit 1764 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakimoto JP 57-111000 in combination with Yoshiyuki et al. JP2000-015635 further in view of GB 1 507 138.

Wakimoto JP 57-111000 teaches the invention substantially as claimed. Specifically Wakimoto JP 57-111000 teaches a waste disposal method which mainly consists of organic substances to be decomposed into carbide and gas by heating in an atmosphere filled with superheated steam and substantially without air wherein the organic material is carbonized to provide a carbide which is recoverable, the condensed water soluble gas is collected separately in conventional separatory devices and further separated into combustible and non-combustible gases.[Note the translated English abstract].

However, it is not described whether the method provides a step wherein the carbide or carbonized wastes are exposed to a low temperature steam to decrease the temperature of the carbide after exposure to the high temperature steaming step.

Yoshiyuki et al. teaches a method of dechlorinating wastes containing chlorine which includes the steps of trash which is ground in a grinder(12) and preheated is introduced to a dechlorination furnace (17) wherein a high temperature steam at 300-450°C is introduced into the dechlorination furnace, which pyrolyzes or carbonizes the wastes containing chlorine. The dechlorination reactions takes place at 300°C however, at this temperature the efficiency of the carbonization is not desirable so the steam is adjusted to a temperature of 450 °C.[Note Page 6, Paragraphs 0053-0056 machine translation.] The dechlorination reactions take place in an anaerobic atmosphere. The gases from the dechlorination furnace are subsequently separated into an exhaust gas 19 and dechlorination solid (20). The exhaust gas is then subjected to a temperature of 800-900°C, which decomposes the dioxin in the exhaust gas to provide a clean exhaust gas.[Note Page 7-9 paragraph 0062-0069]

GB 1 507138 teaches a process an apparatus for thermally cracking organic solid waste, the process includes providing a waste, which includes rubber-containing, organic solid wastes such as tires, industrial rubber, golf balls etc. Specifically GB 1 507 138 teach introducing the organic waste into a reactor 93) , introducing superheated steam from the steam generator, the temperature

Art Unit: 1764

of the steam is between 500-900°C at a pressure of about 0.3 to about 1.5 kg/cm² which thermally cracks the rubber containing waste material, resulting in a gas and residue. The cracked product is condensed in the condenser (4) and then separated into gas and liquid. the resulting gas portion can be recycled to the steam generator (2) via return line (60). The liquid portion is left to stand in the second receiver (59), which includes separatory devices which separates the liquid into oil and water. The water is reused, the residue from the thermal cracking can be used in the production of rubbers.[Note Page 3, lines 71-115]

It would have been obvious to one having ordinary skill in the art to provide a method of waste disposal which includes raw garbage, used tires, waste lumber, paper diapers, water plastic which is exposed to high temperature steam in a oxygen free state to be carbonized. This is specifically taught and suggested in all three prior art documents. The prior art documents as set forth in the rejection employ super heated high temperature steam in an oxygen free atmosphere which is specifically used in thermally cracking organic, plastic or vinyl chloride containing products, tires etc in an anaerobic atmosphere. None of the references specifically teach the step of exposing the resulting solid residue wastes to a low temperature steam as claimed but the residue is collected and re-used or further treated. To further cool the thermally cracked solid organic waste would have been obvious to one having ordinary skill in the art because the prior art does teach adjusting the steam temperature to provide reaction and further teaches controlling the steam temperature to control the rate of reaction, to cool the residue before exposure to air so that combustion would not occur

Art Unit: 1764

would have been obvious to one familiar thermally cracking organic wastes and the art does provide a suggestion to used and further treat and the solid residue as well as the exhaust gas resulting from the thermally cracking reactions thus rendering applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 07331248 teaches a continuous carbonization apparatus, which provides steam to a carbonization-heating vessel, and dry distillation vessel. JP 11223476 teaches a method and system for carbonizing organic material. JP 11128870 teach a dry distillation and carbonization method which is executed after a fermentation stage, the dry distillation is executed by raising the temp in a vessel to about 300°C with waste gas and steam for a desired time, then raising the temperature to about 700°C with high temperature steam and then superheating by a burner in the vessel. The cooling stage is executed by putting out the burner by injection water into the vessel while agitating the treated matter after carbonization. Walker teaches a method and apparatus for treatment of waste. Tanaka teaches a medical waste disposal apparatus.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

Art Unit: 1764

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


N. Bhat
Primary Examiner
Art Unit 1764
